Project Hanford Lessons Learned

Title: Discovery of Inventory Information Not Previously Considered in the Documented Safety Analysis

Date: October 12, 2005

Identifier: 2005-RL-HNF-0038

Lessons Learned Summary:
Documents that form the bases for Documented Safety Analysis (DSA) or are otherwise utilized in the analyses should be formally issued to ensure that they are readily retrievable. Preparation of DSA documents requires diligent review of facility files to ensure that relevant documents are identified. The need to improve technical accuracy must be determined during the revision and implementation of DSA documents. Comparison of the inventory basis in related documents to the inventory basis in the DSA is essential to ensure the DSA reflects the most up-to-date information.

Discussion of Activities:
A review of inventory documents, as part of the 209-E DSA annual update, resulted in the discovery of additional unreleased inventory data prepared by a former contractor not previously considered in the DSA. During the review, two Non-destructive Analysis (NDA) summary letters were discovered. The discovered NDA summary letters were generated subsequent to the NDA summary letter that the DSA preparers used for facility nuclear inventory in the accident analysis. The subsequent summary letters indicated a plutonium isotopic composition with a less favorable dose conversion factor and a small increase in the inventory. Based on the review of the additional information, the project declared a Potential Inadequacy in the Safety Analysis (PISA) and later declared a positive Unreviewed Safety Question (USQ).

Analysis:
The DSA was rewritten as part of implementation of 10CFR830 Subpart B and issued to FH by DOE-RL via a Safety Evaluation Report. At that time several Nuclear Facilities were transferred to the project and multiple DSA documents were required to be revised and implemented, in a short period of time, to assure compliance. This was to be accomplished with limited trained and experienced nuclear safety staff available.

The NDA summary letter referenced by the DSA was not readily available for review and access to the other NDA summary letters was impaired because the letters were not issued as controlled documents. A Criticality Safety Evaluation Report (CSER) that had been prepared and approved earlier contained the NDA summary letters and was released as part of the DSA implementation. Careful review of the CSER document during the implementation of the DSA could have revealed the existence of the NDA summary letters not considered in the DSA. Identification of the need to improve the DSA documentation would have led to application of additional resources to alleviate deficiencies in resources, documentation, and reviews.

Recommended Actions:
Formally issue documents that form the bases for DSA analysis, or are otherwise utilized in the analyses, to ensure that they are readily retrievable.

When preparing DSAs diligently review all potential facility files to ensure that all relevant documents are identified, and all errors or inconsistencies are detected.

Compare inventory information in related documents to the inventory in the DSA to ensure the DSA considers all available inventory information.

Appropriately determine staffing levels to support schedule requirements, and augment staffing as necessary to support emerging requirements.

Estimated Savings/Cost Avoidance: Not evaluated

Priority Descriptor: BLUE/Information

Work / Function: Authorization Basis, Decontamination & Decommissioning, Operations-Facility

Hanford Functional Categories: Associated Causal Factors - Root Cause - A4B5C01 Change Management, Problem identification did not identify need for change. Apparent Causes - A5B3C02, A4B3C05, A4B5C07, A3B3C01, A4B5C04

Hazard: Personal Exposure-Radiation/Contamination, Radiological Release

ISM Core Function: Identify Hazards and Implement Controls

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Authorized Derivative Classifier: N/A

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Keywords: Source term, Inventory, Documented Safety Analysis, Unreviewed Safety Question

References: Occurrence Report: RL--PHMC-CENTPLAT-2005-0003